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document Lower Limits on Lorentz Factors in Gamma Ray Bursts Yoram Lithwick and Re'em Sari 130-33 Caltech, Pasadena, CA 91125; yoram@tapir.caltech.edu, sari@tapir.caltech.edu abstract As is well-known, the requirement that gamma ray bursts (GRB's) be optically thin to high energy photons yields a lower limit on the Lorentz factor (γ) of the expansion. In this paper, we provide a simple derivation of the lower limit on γ due to the annihilation of photon pairs, and correct the errors in some of the previous calculations of this limit. We also derive a second limit on γ due to scattering of photons by pair-created electrons and positrons. For some bursts, this limit is the more stringent. In addition, we show that a third limit on γ, which is obtained by considering the scattering of photons by electrons which accompany baryons, is nearly always less important than the second limit. Finally, we evaluate these limits for a number of bursts.